

WHAT IS CLAIMED IS:

1. A photosensitive resin composition of an aqueous emulsion type comprising:

5 (A) an emulsion of a photosensitive water-insoluble polymer, the emulsion being obtained by reacting (i) an aqueous polymer emulsion which contains a water-insoluble polymer as its main component and which contains a polymer having a hydroxyl group with (ii) an N-alkylo(meth)acrylamide;

10 (B) a compound having a photoreactive ethylenically unsaturated group; and

10 (C) a photopolymerization initiator.

2. A photosensitive resin composition according to claim 1 wherein the aqueous polymer emulsion (A) (i) contains a water-insoluble polymer and a protective colloid comprising a polymer having a hydroxyl group.

15 3. A photosensitive resin composition according to claim 1 further comprising (E) an epoxy compound having at least two epoxy groups per molecule.

20 4. A photosensitive resin composition according to claim 1 which contains (b) a compound having at least one carboxyl group per molecule and at least one photoreactive ethylenically unsaturated group per molecule as the ingredient (B).

5. A photosensitive resin composition according to claim 1 further comprising (D) a binder resin having a carboxyl group.

5       6. A photosensitive resin composition according to claim 5 wherein the binder resin having a carboxyl group as the ingredient (D) has a photopolymerizable unsaturated group.

10     7. A photosensitive resin composition according to any of claims 1-6 which is used for manufacturing a screen printing stencil.

15     8. A photosensitive resin composition according to any of claims 1-6 which is used as a photoresist ink for manufacturing a printed wiring board.

15     9. A photosensitive resin composition according to claim 8 which is used as a photoetching resist ink, a plating resist ink or a solder resist ink.

10. A method for producing a screen printing stencil comprising:  
(I) a step of providing a photosensitive resin composition recited in any  
20 according to claims 1-6;  
(II) a step of forming a film comprising the photosensitive resin composition on a screen;  
(III) a step of selectively exposing the film to form a cured film on the

screen; and

(VI) a step of washing away to remove an non-exposed portion of the film.

5 11. A method for producing a screen printing stencil comprising:

(I) a step of providing a photosensitive resin composition recited in any according to claims 1-6;

(II) a step of forming a film of the photosensitive resin composition on a releasable film;

10 (III) a step of selectively exposing the film to form a cured film;

(VI) a step of washing away to remove an non-exposed portion of the film; and

(V) a step of transferring the resulting cured film onto a screen.

15 12. A screen printing stencil produced by using the photosensitive resin composition recited in any according to claims 1-6.

13. A screen printing stencil according to claim 12 which is a thick screen printing stencil.

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14. A method for producing a printed wiring board wherein the photosensitive resin composition recited in any according to claims 1-6 is used.

15. A method for producing a printed wiring board according to claim  
14 comprising:

(I) a step of providing a substrate having a metallic layer formed on its  
surface;

5 (II) a step of applying the photosensitive resin composition to the  
surface of the substrate and then drying it;

(III) a step of selectively exposing a predetermined portion of the  
photosensitive resin composition which is applied to the substrate to form a  
cured film;

10 (IV) a step of washing away to remove the non-exposed portion of the  
photosensitive resin composition;

(V) a step of immersing the substrate in an etching solution to subject a  
part of the metallic layer to be etched; and

(VI) a step of removing the cured film.

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16. A method for producing a printed wiring board according to claim  
14 comprising:

(I) a step of providing a substrate with a conductive circuit formed on  
its surface;

20 (II) a step of applying the photosensitive resin composition to the  
surface of the substrate and then drying it;

(III) a step of selectively exposing a predetermined portion of the  
photosensitive resin composition which is applied to the substrate to form a

cured film; and

(IV) a step of washing away to remove the non-exposed portion of the photosensitive resin composition.

5        17. A method for producing a printed wiring board according to claim 16 further comprising a step of heating the cured film to obtain a permanent protective coating.

10        18. A printed wiring board with a cured film on its surface, the cured film being made from the photosensitive resin composition according to any one of claims 1-6.

15        19. A printed wiring board according to claim 18 wherein the cured film is a permanent protective coating.